PROGRESS
OF
MEDICAL SCIENCE.

MEDICINE.

UNDER THE CHARGE OF
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Cholecystitis Typhosa.—DOERR (*Wien. klin. Wchnschr.*, 1905, Bd. xviii. p. 884) and FORSTER (*Münch. med. Wchnschr.*, 1905, Bd. lii. p. 1473). The occurrence of typhoid bacilli in the bile of typhoid patients and typhoid bacilli harborers.

Doerr adds another interesting case of cholelithiasis and cholecystitis caused by the typhoid bacillus. That this organism is frequently found in the bile passages during and long after an attack of typhoid fever has now been established by numerous investigations, indeed the work of Blachstein and Welch would indicate that at least in certain periods of the disease they are constantly present. The bile has no deleterious action upon their growth even after the patient has recovered from the disease and is immune to further infection. The organisms, as a rule, produce in the gall-bladder no pathological condition, but at times inflammations occur varying from slight catarrhal, which rapidly subside, to severe purulent, which not uncommonly go on to necrosis. Such cases have repeatedly yielded at operation pure cultures of typhoid bacilli. The organisms may, however, remain in the gall-bladder for many months and even for many years without producing any symptoms, and then, under certain conditions, set up an acute inflammation. Such attacks are almost always associated with gallstones. An examination of gallstones has shown how frequently masses of typhoid bacilli form the nucleus about which the stone is deposited. The typhoid bacillus has been recovered from the gall-bladder twenty years after the attack of typhoid fever. Dunham has suggested a relation between gall-bladder infection and relapses, and Doerr points out the importance from an epidemiological point of view of an almost continuous reinfection of the intestinal canal with the frequent discharge in the feces of virulent typhoid bacilli in individuals who might never be suspected of harboring the organisms.

Doerr's case is interesting in that the preceding attack of typhoid fever was so mild that the history of it was elicited only after operation gave the suggestion. The patient's blood, however, possessed the characteristic agglutinative properties conferred by an attack of typhoid fever, properties which a gall-bladder infection alone can, he believes, neither convey nor prolong. The organisms obtained in pure culture from the pus and from the gallstone were identified by all the modern methods of cultural and serum diagnosis as true typhoid bacilli. Experiments made by Doerr to throw light upon this question showed that organisms injected into the blood of rabbits appeared after a few hours in the gall-bladder, while typhoid bacilli and those of the colon group multiplied and might be recovered in pure culture after four months. Organisms ingested or introduced by subcutaneous or intraperitoneal injections do not result in infection of the gall-bladder. The bacilli introduced intravenously after appearing in the gall-bladder cause a purulent inflammation, which rapidly subsides. The growth of the organisms in the bile has no influence in prolonging the agglutinative properties acquired by the blood from the original intravenous injection. Typhoid bacilli are from time to time ejected into the intestines and appear in the stools. Antiseptics medicinally administered or injected intravenously do not free the bile from the infection.

Forster has examined at autopsy the bile bacteriologically in 140 cases, in only 8 of which was typhoid fever the cause of death. Of the non-typhoid cases 2 had gallstones. Typhoid bacillus was cultivated from the bile of one and paratyphoid from the other. Of the 8 typhoid cases, in one instance where the autopsy was performed after the body had been lying a long time colon bacillus alone was cultivated from the bile and spleen. In the other 7 the bile of all contained a pure culture of typhoid bacillus and the organism was further recovered from the jejunum six times, from the ileum five times, and from the colon twice. This gradual decrease from above downward in the frequency with which they were obtained from the intestines suggests the possibility that the bile may be the source of the intestinal infection. In animals inoculated with typhoid bacilli the organisms were recovered from the bile and intestines many weeks after the injection and long after they had disappeared from the blood and urine. Similar observations are made clinically. Forster refers to a woman with gallstones and typhoid bacilli in the stools who had had typhoid fever thirty years before. He points out, too, that most individuals identified as harborers of typhoid bacilli are women, and comments on the fact that it is notorious how much more commonly gallstones occur in women than in men.

Blumenthals reports a case where the same paratyphoid organisms were found in the stools as in the bile and gallstones; after operation they disappeared from the feces and had not recurred after a year. In the neighborhood of typhoid fever cases there are always individuals who remain perfectly healthy and yet show for at least short periods bacilli in the stools. One may suppose that bacilli which gain entrance to the intestinal tract multiply there and are then passed with the movements, but it is possible that at least some of these cases have a mild ambulatory form of the disease with an infection of the bile.

Bacteriæmia in Pulmonary Tuberculosis.—JOCHMAN (*Deutsch. Arch. f. klin. Med.*, 1905, Bd. lxxxiii., p. 558. For many years it has been a very popular view to consider the fever and constitutional symptoms in the late stages of pulmonary tuberculosis to be due to the activity of organisms other than the tubercle bacillus, to the flooding of the blood with secondary invaders. Advocates of this view have pointed for support to the frequency with which pyogenic organisms have been found in the blood of phthisical patients. Streptococcus being the most common, they have even described a characteristic streptococcus fever curve. The results of blood examinations, however, have varied considerably with different investigators and the technical methods that have been employed by some are not beyond criticism. Early workers used a drop of blood obtained from the finger-tip by puncture, a procedure which must in all but extremely rare cases be insufficient to demonstrate organisms even when present and one to which is evidently attached great risk of contamination.

Jakowski, in 1893, obtained by this method 7 positive results in 9 cases, cultivating twice streptococcus, four times staphylococcus, and once streptococcus and staphylococcus. Hewelke, in 1896, obtained 14 positive cultures in 21 cases, staphylococcus in 7 instances, once diplococcus, and in the other cases non-pathogenic organisms. Petruschky with a similar method found streptococcus once in 8 cases. With the improved Sittmann method in which 1 or 2 cm. of blood was drawn from a vein, a method affording a larger quantity of blood and lessening greatly the danger of contamination, the originator obtained in 4 cases staphylococcus aureus twice, and once staphylococcus albus. Kraus in 14 cases staphylococcus once. Hirschlaff in 35 cases found staphylococcus albus in 4; Michaelis and Meyer in 10 cases had 8 positive results, obtaining staphylococcus 5 times, twice staphylococcus and a diplobacillus; once staphylococcus and streptococcus. Fraenkel in 20 cases had only negative results. Schroeder and Naegelsbach negative results in 8 cases, Strauss in 19 cases, and Lemierre in 8 cases. Lasker in 68 cases had only a single positive culture, in which instance streptococcus grew out in great numbers. At the present time men who are working with blood cultures look askance at reports showing the frequent presence of staphylococcus, and staphylococcus albus, particularly, is a common contaminator and has only a very restricted pathogenicity. In striking contrast to the above reports of the frequent finding of staphylococcus in the living patient are the autopsy results which rarely or never yield staphylococcus but frequently streptococcus. Schabad in 15 cases found streptococcus 8 times; Petruschky in 14 cases 8 times. Simmons reports having found bacteria in the blood of phthisical corpses 37 times in 108 examinations; the streptococcus 28 times, pneumococcus 4 times, and colon bacillus 5 times.

Jochman has made his examinations with the newer methods, using a large quantity of blood obtained by aspirating the vein under the most careful aseptic precautions. All of the patients examined were in an advanced stage of phthisis, some even moribund. Many had the intermittent temperature curve which has been considered by some typical of streptococcus invasion. All 40 of his examinations proved negative. Nine of these 40 cases came later to autopsy, and of these 9 in only 2 could organisms be cultivated from the blood—once streptococcus in pure culture and once streptococcus and staphylococcus aureus. The absence of streptococcus from the blood during life and its not infrequent discovery after death may be explained either as a preagonal invasion or as evidence of a very rapid reproduction by a few scattered organisms that may have been in the blood before death.

The postmortem invasion of the blood Jochman considers improbable. He is inclined to believe that a true bacteriæmia occurs only very rarely in pulmonary tuberculosis, even in late stages. To what extent the absorption of toxins from streptococcus and staphylococcus active in the old lung lesions may influence the temperature and general symptoms of the patient is another question.

SURGERY.

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Three New Cases of Interscapulothoracic Amputation, with Considerations on the Results of and Indications for the Operation and a Modification of Operative Technique.—Berger (*Revue de chirurgie*, August, 1905) gives in detail in this article his last three cases of interscapulothoracic amputation, the first case being one of sarcoma of the upper extremity of the left humerus, the second a recurring chondroma of the upper portion of the left humerus involving the scapula, and the third a sarcoma of the armpit in which extirpation of the growth was first tried, but owing to a rupture of the axillary artery an interscapulothoracic amputation was immediately done. In discussing the mortality of the operation he divides the cases into three groups according to the situation and character of the growth:

1. In malignant growths confined to the humerus, the mortality, in the cases he has collected, is 3.12 per cent. In chondromas of this region so far no deaths have been reported, so that the total mortality from tumors involving the humerus is 2.75 per cent.

2. In malignant growths involving the scapula the death rate is 25 per cent.; for chondroma of this bone but one operation with recovery has been reported. The total mortality for scapular tumors is 23.80 per cent.

3. Various malignant growths of the soft tissues of the shoulder region, with uncertain boundaries, mortality 11.24 per cent.

He then speaks of the safety of this operation for tumors confined to the humeral region, and the dangers of waiting until such growths